

Shore Protection Manager

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**CARTERET COUNTY BEACH COMMISSION MEETING
SEPTEMBER 23, 2019; 2:00 pm
PINE KNOLL SHORES TOWN HALL**

AGENDA

(1)	Call to Order.	<i>Chairman Cooper</i>
(2)	Approval of Minutes. (Regular Beach Commission Meeting – July 8, 2019)	<i>Chairman Cooper</i>
(3)	Room Occupancy Tax (ROT) and “Beach Fund” Update.	<i>Greg “rudi” Rudolph</i>
(4)	Bid Result/Award Discussion: Post-Florence Renourishment Project (Phase II).	<i>Greg “rudi” Rudolph & Moffatt & Nichol</i>
(5)	2018 - 2019 Annual Report: Bogue Banks Beach & Nearshore Mapping Program.	<i>Nicole VanderBeke (Moffatt & Nichol)</i>
(6)	Other Business.	
(7)	October 2019 Meeting Date. (October 28, 2019)	<i>Chairman Cooper</i>
(8)	Adjourn.	<i>Chairman Cooper</i>

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CARTERET COUNTY BEACH COMMISSION

Agenda Topic Cover Sheet

Approval of Minutes

Regular Beach Commission Meeting – July 8, 2019

Meeting Date: 9/23/19

Topic No. 2

Suggested Action: A motion should be entertained to approve the July 8, 2019 meeting minutes with any recommended changes from the Beach Commission.

Attached for the Beach Commission's review, comments, and subsequent approval are the minutes for the Commission's July 8, 2019 regular meeting.

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CARTERET COUNTY BEACH COMMISSION MEETING

Minutes
Pine Knoll Shores Town Hall
July 8, 2019, 2 pm

Attendance.

Commission Members A.B. "Trace" Cooper (chair), Jim Normile (vice-chair), Larry Baldwin, Larry Corsello, Jimmy Farrington, Joel Fortune, Ken Jones, Woody Warren, John Wootten, secretary Greg Rudolph, and the general public. Members Harry Archer and Douglas Guthrie were absent.

- (1) **Call to Order.** - Chairman Cooper welcomed fellow Beach Commission members (including member Jones via phone) and the audience; and subsequently called the meeting to order.
- (2) **Approval of Minutes – Regular Beach Commission Meeting (May 20, 2019).** – Chairman Cooper asked the Commission if there were any corrections, additions, or comments regarding the May 20th regular session minutes presented in the agenda packet. Member Corsello subsequently made a motion to adopt the minutes as presented, which was seconded by member Fortune and unanimously approved.
- (3) **Room Occupancy Tax (ROT) and "Beach Fund" Update.** – Secretary Rudolph immediately noted the May occupancy collection report was received hours after the agenda packet was e-mailed to the Beach Commission; and therefore the next two summary slides ([1 & 2](#)) have been made current through May, not April as provided in the printed agenda. That issue notwithstanding, while the April 2019 collection was down by -18% compared to the April 2018 collection; the May 2019 collection was up by an eye-opening +77% compared to the May 2018 collection. It is obvious some of the weekend collections in the early or latter stages of the months are getting parlayed into the previous or following monthly collection reports. Thus while the May numbers are impressive it would not be surprising if some of the June collection has been weaved into the May report, and accordingly we could see a slight dip in June – or something to this effect. Regardless, the occupancy tax is up by +5.7% for the fiscal year with one reporting month remaining and is up by +24.8% through the first five months of the calendar year. Chairman Cooper added that we should brace ourselves for a slight dip in collections over the summer as we have discussed – there's not enough inventory this summer in the wake of hurricane *Florence* to accommodate the same or more visitors that traditionally spend their summer vacations along Bogue Banks/County. But hopefully this will be just a little dip and we will be fully recovered next summer (2020). Secretary Rudolph continued our best estimate of the nourishment reserve value was ~\$10 million once we take our revenues/expenditures current through May 2019 and the costs associated with the Post-*Florence* Phase I Project through June 30th – [slide 2](#).

- (4) **2019-20 Beach Nourishment Planning Discussion II.** – Chairman Cooper introduced the topic by noting that at our last meeting, we established a nourishment plan moving forward balancing the cash we have in hand with potential FEMA fixed-cost funding, but the State’s recent award to the County totaling \$15 million has changed our thinking on how to sequence the project and therefore our bid strategy as well. Secretary Rudolph consequently introduced the team of Moffatt & Nichol (Johnny Martin, Sam Morrison, and Nicole Vanderbeke) who along with the Shore Protection Office would be providing the presentation today ([Slides 3 - 21](#)).

Mr. Morrison initiated the presentation by reviewing the Phase I Project that was just completed and transitioned to our path forward for Phase II. The Phase II effort was envisioned to utilize a “base + option” format – basically the base represented what cash reserves we had in hand to perform beach nourishment and the option would be awarded only if FEMA fixed costs were awarded. Geographically, the base included Pine Knoll Shores and Emerald Isle Central, with the remainder as the option (Emerald Isle West, Slater Path State oceanfront, and Atlantic Beach West). Now with the State funding that has been awarded and reviewing the most recent survey data, the base and option areas have been changed; AND there are four different scenarios that have been developed that need to be constrained today so our bid structure can be developed and solicited ([Slides 3 – 7](#)).

The secretary subsequently discussed the funding we have in hand that again with the State funding has jumped from ~\$21 million to ~\$31 million total for the base year of Phase II. Importantly, the State funding requires a 1 to 1 local match AND the State funds cannot be used to reimburse the grantee for sand that is federally reimbursed. Hence our focus has shifted to the areas of Bogue Banks that are FEMA engineered and/or areas that require more sand along the FEMA engineered beaches than *Florence* took away – at least for the base year of Phase II. For the option year, the secretary took the funding just discussed and meshed that total with the funding that would be possible if FEMA fixed-cost is awarded. This represents that maximum project if you will (~\$100 million). And lastly, the FEMA fixed cost-funding program allows the municipalities to keep any funding that is not spent on beach nourishment (as long it is only used in the future on eligible “category G” projects). So with these points established as our ground rules, we have developed 4 scenarios that range to spending the least amount of money, to leveraging all or part of State funding, to spending everything (all local, State, & FEMA funding) – [Slides 8 – 10](#).

Mr. Martin continued the presentation by summarizing the four different scenarios ([Slides 11 – 21](#)), which Mr. Martin added was a task in itself (i.e., limiting the scenarios to just four). The ground rules in developing the scenarios included; (a) keeping the base year to ~\$31 million to maximize the State funding received (with the compulsory 1:1 cost-share), (b) FEMA fixed cost is still an uncertainty (if and when), and (c) regardless of the funding source, select the areas in the most need of sand. The non-FEMA engineered beach zones are eligible for State/local cost sharing and also will be considered “engineered” after the Phase II effort (Atlantic Beach West, State Salter Path, and the area of Emerald Isle West known as Bogue Inlet Ocean). In fact these non-FEMA engineered beach zones in addition to the sand in excess of what was lost to *Florence* in Pine Knoll Shores generally compromises the base bid in all four scenarios. Scenario 1 and 2 have the same base bid and encompass a larger geographical footprint in Emerald Isle West/Bogue Inlet compared to the base bid in Scenarios 3 and 4. The options for all four scenarios are different.

Member Corsello asked if we had a cost break down for each of the Towns. Mr. Martin and secretary responded that we do but it is complicated and should be considered more of a range – each scenario has a different State, County (nourishment reserve), FEMA, and Town match for the base bid and the option so again it can get cumbersome and we can discuss the ranges for Pine Knoll Shores after the meeting. Member Corsello replied that he understood and expressed his appreciation for going through scenarios in the level of detail that we did. Chairman Cooper added that in general, any sand that will not be FEMA reimbursed/fixed cost is a 50% State; 37.5% Nourishment Reserve, and 12.5% Town cost (i.e., “75% County – 25% Town” split). Member Baldwin asked if we had enough sand in our borrow sources for this work, which was subsequently answered by Mr. Martin – there is 10 million cubic yards permitted just for this Phase I and II effort, and our maximum under any scenario is~ 4.5 million cubic yards. Thus no problems.

Vice-Chair Normile speaking as one of Emerald Isle’s representatives on the Beach Commission disclosed that he preferred Scenario 2 because it would maximize the footprint in Emerald Isle West/ Bogue Inlet in the base year and that is a good safety net if FEMA funding does not come to fruition – that’s a critical area of the beach. Scenario 4 (exhaust all funding sources) is a bit of an overkill and we should be a little more frugal. Of course then Scenario 1 is not enough. Chairman Cooper added that one of the strengths of the Beach Commission is that we really do take an island wide approach and this is a good discussion – i.e., weighing more coverage in Emerald Isle West/Bogue Inlet Ocean (Scenario 2) vs. maximizing all State funding (Scenario 3) and getting Bogue Inlet Ocean covered in the option years. The Commission and Moffatt & Nichol discussed ways of perhaps bidding Scenario 3 project in a manner that can also get some sand in Bogue Inlet Ocean (i.e., changing the fill densities in all the reaches to accommodate this, or add sand to the contract if a lower bid cost is received, etc.). Vice-chair Normile subsequently made motion to proceed with Scenario 3 with whatever small changes the engineers can make to get sand into the Bogue Inlet Ocean reach. The motion was seconded by member Corsello and unanimously approved. Chairman Cooper added that it should be understood that if the FEMA fixed-cost is awarded, then the Beach Commission also approves exercising the option for Scenario 3 as well. The Commission agreed by consensus.

- (5) **Public Comment.** – Ted Lindblad (audience/Pine Knoll Shores resident) asked if the Commission was pursuing any studies that could say one way or the other whether if nourishment is negatively or positively impacting rip currents. The secretary and Chairman replied that there are so many other factors that play into water rescues that it would be almost impossible to prove one way or the other (e.g., more visitors at the regional public accesses equate to more rescues, public education, human behavior, etc.).
- (6) **Other Business.** – None.
- (7) **August 2019 Meeting Date (August 26, 2019 or TBD).** – It was agreed upon the next Beach Commission meeting would be held on August 26th at 2:00 pm, Pine Knoll Shores Town Hall, or at a later date perhaps depending upon the formulation of the Phase II nourishment bid package discussed in agenda topic #4 above.
- (8) **Adjourn.** – Chairman Cooper asked for any additional comments and with no additional comments forthcoming, the meeting was adjourned.

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CARTERET COUNTY BEACH COMMISSION

Agenda Topic Cover Sheet

Room Occupancy Tax (ROT) and “Beach Fund” Update.

Meeting Date: **9/23/19**

Topic No. **3**

Suggested Action: None.

A copy of Carteret County’s monthly Room Occupancy Tax (ROT) collection reports for May and June 2019 are attached to this month’s “Beach Fund” update, and in essence, conclude the reporting for the 2018-2019 fiscal year. The data are consequently incorporated into four summary tables presented at the end of this coversheet including; **Table 1** - a running summary of ROT collections comparing monthly revenues from FY 2018-19 to FY 2017-18, **Table 2** - a summary of ROT revenue from a Calendar Year perspective (CY 2019 - CY 2012), **Table 3** - a more detailed FY 2018-19 to FY 2017-18 revenue comparison of the collection by sectors (hotel/motel, condo/cottage, and “other”), and **Table 4** - a year-to-date estimate of the Beach Fund.

Collectively, the May/June collection for 2019 was up by less than a percentage point (+0.8%) compared to the same two months in 2018 (\$1,911,805 vs. \$1,897,280) representing a +\$14,525 overall increase or a \$7,262 (50% of total) increase to the nourishment reserve. Overall the occupancy collection was up by +1.5% for FY 2018-19 compared to FY 2017-18 (\$7,689,127 vs \$7,575,723), which could be postulated as a “very good” outcome considering most of the fiscal year was within the wake period of hurricane *Florence* that stalled near Bogue Banks in mid-September 2018 (Table 1). Upon further inspection of the fiscal year from a collection sector standpoint, FY 2018-19 was buoyed by the condo/cottage sector that was in positive territory (+4.8%), while the other two categories concluded the fiscal year in the negative – hotel/motel (-2.8%) and “other” (-7.9%) per Table 3 below.

The July occupancy tax collection report is also attached, and obviously constitutes the first collection report of FY 2019-20 – this is the most recent report that has been generated to date and is presented in the this agenda packet to speak to the 2019 calendar year trend (see Table 2). Accordingly, July 2019 was down by over -12% compared to July 2018 (\$1,713,896 vs. \$1,951,256), which is on the heels of the June occupancy tax figure that was down by over -14%. This has suppressed our 2019 calendar year collection, which is down -3.6% through July and almost certainly reflects the lack of inventory that resulted from *Florence* – i.e., likely the same amount of visitors who would like to stay in Carteret

County as previous summers but fewer hotel rooms, condos, etc. available to accommodate this similar demand.

And lastly as illustrated in Table 4 below, our estimated value for the "Beach Fund" at the end of FY 2018-19/beginning of FY 2019-20 is approximately \$10.7 million and was generated by taking our opening balance on July 1, 2018, our expenditures to date through June 2019, and revenue through June 2019 into account. A copy of the expenditure report for the month of June (fiscal year end) is also attached to this cover sheet for the Commission's review, and obviously we have incorporated the financial transactions (invoicing and payments) associated with Phase I of the Post-*Florence* Renourishment Project. Great Lakes Dredge & Dock submitted the bulk of their invoices to the municipalities before the end of FY 2018-19 – there a couple/few invoices associated with the Phase I project regarding dune planting and engineering services, but macroscopically speaking, the overwhelming bulk of the project's transactions occurred in FY 2018-19.

**Cumulative Analysis and Monthly Comparison
Room Occupancy Tax (ROT) and the "Beach Fund"
FY 2018-19 v. 2017-18
Carteret County**

Month	Gross Receipts TDA & Beach		Beach Fund (Monthly)*		Beach Fund (YTD)*		Occ. Tax Total Monthly Difference	Occ. Tax Total YTD Difference
	FY 17-18	FY 18-19	FY 17-18	FY 18-19	FY 17-18	FY 18-19		
Jul	\$2,022,661	\$1,951,256	\$1,011,331	\$975,628	\$1,011,331	\$975,628	-3.53%	-3.53%
Aug	\$1,345,057	\$1,339,735	\$672,528	\$669,867	\$1,683,859	\$1,645,495	-0.40%	-2.28%
Sep	\$651,908	\$720,343	\$325,954	\$360,172	\$2,009,813	\$2,005,667	10.50%	-0.21%
Oct	\$424,176	\$304,571	\$212,088	\$152,286	\$2,221,901	\$2,157,953	-28.20%	-2.88%
Nov	\$260,361	\$380,894	\$130,181	\$190,447	\$2,352,081	\$2,348,400	46.29%	-0.16%
Dec	\$97,436	\$150,872	\$48,718	\$75,436	\$2,400,800	\$2,423,836	54.84%	0.96%
Jan	\$108,736	\$166,761	\$54,368	\$83,380	\$2,455,168	\$2,507,216	53.36%	2.12%
Feb	\$147,363	\$153,978	\$73,682	\$76,989	\$2,528,849	\$2,584,205	4.49%	2.19%
Mar	\$194,638	\$241,029	\$97,319	\$120,514	\$2,626,168	\$2,704,719	23.83%	2.99%
Apr	\$426,106	\$367,884	\$213,053	\$183,942	\$2,839,221	\$2,888,661	-13.66%	1.74%
May	\$314,986	\$558,112	\$157,493	\$279,056	\$2,996,714	\$3,167,717	77.19%	5.71%
Jun	\$1,582,294	\$1,353,693	\$791,147	\$676,846	\$3,787,861	\$3,844,564	-14.45%	1.50%
Totals=	\$7,575,723	\$7,689,127	\$3,787,861	\$3,844,564	\$3,787,861	\$3,844,564	Avg. = 17.52%	1.50%

Note: 6% overall collection rate (* = 50 TDA/50 Beach Fund split).

TABLE 1 – Monthly and cumulative summary of the Carteret County room occupancy tax collection reflecting the current and previous fiscal year in terms of the gross revenue and the portion of revenue legislatively mandated for beach nourishment (i.e., the “Beach Fund”).

**Cumulative Analysis and Monthly Comparison
Room Occupancy Tax (ROT) and the "Beach Fund"
Calendar Year 2019 - 2012
Carteret County (6% collection rate)**

Month	2019	2018	2017	2016	2015	2014	2013		2012	
	6%	6%	6%	6%	6%	6%	6%	5%	6%	5%
Jan.	\$166,761	\$108,736	\$90,369	\$72,738	\$65,107	\$54,359	\$48,955	\$40,796	\$50,517	\$42,097
Feb.	\$153,978	\$147,363	\$102,895	\$80,744	\$66,976	\$60,118	\$52,897	\$44,081	\$62,634	\$52,195
Mar.	\$241,029	\$194,638	\$198,697	\$197,020	\$142,289	\$121,346	\$128,088	\$106,740	\$114,521	\$95,434
Apr.	\$367,884	\$426,106	\$378,586	\$267,064	\$238,039	\$218,570	\$187,767	\$156,472	\$226,302	\$188,585
May	\$558,112	\$314,986	\$574,112	\$495,403	\$519,427	\$530,041	\$373,921	\$311,601	\$368,024	\$306,687
June	\$1,353,693	\$1,582,294	\$1,211,103	\$1,254,762	\$1,194,984	\$1,119,788	\$1,126,150	\$938,458	\$1,041,735	\$868,113
July	\$1,713,896	\$1,951,256	\$2,022,661	\$1,945,706	\$1,799,562	\$1,714,309	\$1,440,439	\$1,200,365	\$1,436,356	\$1,196,963
Aug.		\$1,339,735	\$1,345,057	\$1,310,899	\$1,310,391	\$1,327,500	\$1,270,274	\$1,058,562	\$1,140,977	\$950,814
Sept.		\$720,343	\$651,908	\$632,513	\$598,281	\$514,648	\$471,580	\$392,983	\$437,265	\$364,387
Oct.		\$304,571	\$424,176	\$354,178	\$357,967	\$348,348	\$296,997	\$247,497	\$219,665	\$183,054
Nov.		\$380,894	\$260,361	\$192,591	\$148,172	\$125,217	\$145,665	\$121,388	\$120,973	\$100,811
Dec.		\$150,872	\$97,436	\$98,029	\$89,584	\$92,698	\$72,597	\$60,498	\$51,216	\$42,680
Totals =	\$4,555,352	\$7,621,795	\$7,357,361	\$6,901,648	\$6,530,780	\$6,226,944	\$5,615,329	\$4,679,441	\$5,270,185	\$4,391,821
YTD =	-3.60%									
(+/-) previous year		3.59%	6.60%	5.68%	4.88%	10.89%	6.55%		-1.39%	

TABLE 2 – Monthly and cumulative summary of the Carteret County Room Occupancy Tax collection reflecting the current and previous seven calendar years in terms of the gross revenue only.

HOTELS/MOTELS

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Month	2017-18		2018-19		FY 2018-19 v. 2017-18	
	Monthly	Year-to-Date	Monthly	Year-to-Date	Monthly	Year-to-Date
Jul	\$370,322	\$370,322	\$365,114	\$365,114	-\$5,208	-1.41%
Aug	\$274,246	\$644,568	\$217,643	\$582,757	-\$56,603	-9.59%
Sep	\$177,382	\$821,950	\$236,742	\$819,499	\$59,360	-0.30%
Oct	\$194,831	\$1,016,781	\$147,923	\$967,422	-\$46,909	-4.85%
Nov	\$94,295	\$1,111,076	\$129,778	\$1,097,200	\$35,483	-1.25%
Dec	\$57,487	\$1,168,563	\$92,243	\$1,189,443	\$34,757	1.79%
Jan	\$64,220	\$1,232,782	\$86,242	\$1,275,685	\$22,022	3.48%
Feb	\$75,355	\$1,308,137	\$83,762	\$1,359,447	\$8,407	3.92%
Mar	\$117,220	\$1,425,358	\$121,653	\$1,481,100	\$4,433	3.91%
Apr	\$171,013	\$1,596,371	\$156,419	\$1,637,519	-\$14,594	2.58%
May	\$164,845	\$1,761,215	\$202,368	\$1,839,887	\$37,524	4.47%
Jun	\$410,906	\$2,172,122	\$271,570	\$2,111,457	-\$139,336	-2.79%
Totals=	\$2,172,122	\$2,172,122	\$2,111,457	\$2,111,457	-\$139,336	-2.79%

CONDOS/COTTAGES

Month	2017-18		2018-19		FY 2018-19 v. 2017-18	
	Monthly	Year-to-Date	Monthly	Year-to-Date	Monthly	Year-to-Date
Jul	\$1,536,111	\$1,536,111	\$1,462,838	\$1,462,838	-\$73,273	-4.77%
Aug	\$986,966	\$2,523,077	\$1,046,472	\$2,509,310	\$59,506	-0.55%
Sep	\$432,336	\$2,955,413	\$446,022	\$2,955,332	\$13,686	0.00%
Oct	\$198,533	\$3,153,946	\$118,172	\$3,073,504	-\$80,361	-2.55%
Nov	\$91,458	\$3,245,403	\$225,997	\$3,299,501	\$134,539	1.67%
Dec	\$28,719	\$3,274,123	\$38,797	\$3,338,298	\$10,077	1.96%
Jan	\$15,587	\$3,289,710	\$42,818	\$3,381,116	\$27,231	2.78%
Feb	\$41,210	\$3,330,920	\$25,854	\$3,406,970	-\$15,356	2.28%
Mar	\$34,772	\$3,365,692	\$66,460	\$3,473,431	\$31,688	3.20%
Apr	\$207,589	\$3,573,281	\$154,609	\$3,628,039	-\$52,980	1.53%
May	\$115,838	\$3,689,120	\$283,506	\$3,911,545	\$167,668	6.03%
Jun	\$1,039,338	\$4,728,457	\$1,044,576	\$4,956,121	\$5,238	4.81%
Totals=	\$4,728,457	\$4,728,457	\$4,956,121	\$4,956,121	\$227,664	4.81%

OTHER, LESS THAN 5, & ON-LINE TOTAL

Month	2017-18		2018-19		FY 2018-19 v. 2017-18	
	Monthly	Year-to-Date	Monthly	Year-to-Date	Monthly	Year-to-Date
Jul	\$116,227	\$116,227	\$123,303	\$123,303	\$7,076	6.09%
Aug	\$83,846	\$200,073	\$75,620	\$198,923	-\$8,225	-0.57%
Sep	\$42,191	\$242,263	\$37,579	\$236,503	-\$4,611	-2.38%
Oct	\$30,811	\$273,075	\$38,477	\$274,980	\$7,665	0.70%
Nov	\$74,609	\$347,683	\$25,120	\$300,099	-\$49,489	-13.69%
Dec	\$11,230	\$358,914	\$19,832	\$319,931	\$8,602	-10.86%
Jan	\$28,929	\$387,843	\$37,701	\$357,632	\$8,772	-7.79%
Feb	\$30,799	\$418,641	\$44,361	\$401,993	\$13,562	-3.98%
Mar	\$42,645	\$461,286	\$52,915	\$454,908	\$10,270	-1.38%
Apr	\$47,504	\$508,790	\$56,856	\$511,764	\$9,352	0.58%
May	\$34,303	\$543,093	\$72,238	\$584,002	\$37,935	7.53%
Jun	\$132,051	\$675,144	\$37,547	\$621,549	-\$94,503	-7.94%
Totals=	\$675,144	\$675,144	\$621,549	\$621,549	-\$53,595	-7.94%

TABLE 3 – Monthly and cumulative summary of the Carteret County occupancy tax collection segregated by each of the three collection sectors (hotel/motel, condo/cottage, and “other”) for the current and previous fiscal years in terms of the gross revenue only. Note: On-line collection was first implemented in January 2016.

**Estimated Year-to-Date "Beach Fund" Reserve Balance
FY 2018-19**

Opening Fund Balance (7/1/18)	\$18,631,010
Revenues	
Occupancy Tax (to date)	\$3,844,564
Coastal Storm Damage Mitigation Fund (S.L. 2018-5)	\$5,000,000
Interest on Reserve	NA
Total Revenues	<u>\$8,844,564</u>
Expenditures	
Shore Protection Office (6/30/19)	\$441,148
Post Florence Renourishment Project - Phase 1	\$16,336,993
County Occupancy Tax Administration Fee*	\$43,446
Total Expenditures	<u>\$16,821,586</u>
 (Deficit)/Surplus for Year	 <u>(\$7,977,022)</u>
 Fund Balance	 <u><u>\$10,653,987</u></u>

*Up to 3% of first \$500,000 of gross proceeds and 1% of remaining gross receipts collected each year.

TABLE 4 – Estimated value of the “Beach Fund” utilizing the opening fund balance at the beginning of the current fiscal year, coupled with the revenues and expenditures to date.

OCCUPANCY TAX COLLECTION**Reporting period:****May-19**

Type	Tax Received	Penalties & Interest	Total Reporting Tax	Total No Tax
CONDOS/COTTAGE	\$ 283,222.62	\$ 283.61	66	64
HOTEL / MOTEL	\$ 202,368.37	\$ -	27	10
OTHER	\$ 32,888.21	\$ 374.02	92	102
ONLINE	\$ 38,975.32	\$ -	5	1
TOAL ALL TYPES	\$ 557,454.52	\$ 657.63	190	177
Total Collected	\$ 558,112.15			

May-19

Reporting Location	Condos/Cottage Tax	Hotel/Motel Tax	Other Tax	On Line	Total
Atlantic Beach	\$50,513.85	\$32,351.78	\$5,577.87	\$0.00	\$88,443.50
Beaufort	\$3,334.44	\$36,949.38	\$4,532.92	\$0.00	\$44,816.74
Cape Carteret	\$304.33	\$14,946.95	\$0.00	\$0.00	\$15,251.28
Emerald Isle	\$224,334.85	\$25,750.32	\$13,999.59	\$0.00	\$264,084.76
PKS / Salter Path/ Indian Beach	\$2,971.86	\$51,800.89	\$1,318.82	\$0.00	\$56,091.57
Morehead City	\$249.12	\$30,722.98	\$258.60	\$0.00	\$31,230.70
On Line	\$0.00	\$0.00	\$0.00	\$38,975.32	\$38,975.32
Unincorporated	\$1,797.78	\$9,846.07	\$7,574.43	\$0.00	\$19,218.28
Totals	\$283,506.23	\$202,368.37	\$33,262.23	\$38,975.32	\$558,112.15

OCCUPANCY TAX COLLECTION**Reporting period:****Jun-19**

Type	Tax Received	Penalties & Interest	Total Reporting Tax	Total No Tax
CONDOS/COTTAGE	\$ 1,044,408.68	\$ 167.22	129	39
HOTEL / MOTEL	\$ 270,638.68	\$ 930.93	28	7
OTHER	\$ 34,734.29	\$ 237.82	62	51
ONLINE	\$ 2,575.22	\$ -	5	1
TOAL ALL TYPES	\$ 1,352,356.87	\$ 1,335.97	224	98
Total Collected	\$ 1,353,692.84			

June-19

Reporting Location	Condos/Cottage Tax	Hotel/Motel Tax	Other Tax	On Line	Total
Atlantic Beach	\$125,856.49	\$57,694.24	\$4,958.13	\$0.00	\$188,508.86
Beaufort	\$6,894.25	\$30,216.68	\$10,446.21	\$0.00	\$47,557.14
Cape Carteret	\$386.03	\$15,765.05	\$0.00	\$0.00	\$16,151.08
Emerald Isle	\$888,254.03	\$28,357.50	\$15,707.82	\$0.00	\$932,319.35
PKS / Salter Path/ Indian Beach	\$10,664.41	\$80,601.20	\$792.00	\$0.00	\$92,057.61
Morehead City	\$645.78	\$47,818.20	\$552.36	\$0.00	\$49,016.34
On Line	\$0.00	\$0.00	\$0.00	\$2,575.22	\$2,575.22
Unincorporated	\$11,874.91	\$11,116.74	\$2,515.59	\$0.00	\$25,507.24
Totals	\$1,044,575.90	\$271,569.61	\$34,972.11	\$2,575.22	\$1,353,692.84

Notes:

(a) The collection value represents the location of the reporting office only, and may not be 100% correlative to the actual lodging location.

(b) The locations listed as "Unincorporated" are collectors not located in a municipality.

OCCUPANCY TAX COLLECTION

Reporting period:

Jul-19

Type	Tax Received	Penalties & Interest	Total Reporting Tax	Total No Tax
CONDOS/COTTAGE	\$ 1,291,423.43	\$ 209.07	129	39
HOTEL / MOTEL	\$ 310,623.18	\$ 1,295.03	28	7
OTHER	\$ 37,560.32	\$ 274.84	62	51
ONLINE	\$ 72,510.42	\$ -	5	1
TOAL ALL TYPES	\$ 1,712,117.35	\$ 1,778.94	224	98
Total Collected	\$ 1,713,896.29			

July-19

Reporting Location	Condos/Cottage Tax	Hotel/Motel Tax	Other Tax	On Line	Total
Atlantic Beach	\$141,011.19	\$61,283.21	\$5,196.23	\$0.00	\$207,490.63
Beaufort	\$8,315.16	\$39,089.72	\$9,618.38	\$0.00	\$57,023.26
Cape Carteret	\$431.17	\$17,408.28	\$0.00	\$0.00	\$17,839.45
Emerald Isle	\$1,111,312.45	\$41,752.27	\$17,364.49	\$0.00	\$1,170,429.21
PKS / Salter Path/ Indian Beach	\$13,057.23	\$91,686.16	\$2,115.75	\$0.00	\$106,859.14
Morehead City	\$272.16	\$49,268.82	\$886.89	\$0.00	\$50,427.87
On Line	\$0.00	\$0.00	\$0.00	\$72,510.42	\$72,510.42
Unincorporated	\$17,233.14	\$11,429.75	\$2,653.42	\$0.00	\$31,316.31
Totals	\$1,291,632.50	\$311,918.21	\$37,835.16	\$72,510.42	\$1,713,896.29

ACS FINANCIAL SYSTEM
8/20/2019 11:42:28
LEVEL OF DETAIL 1.0 THRU 4.0

Expenditure Guideline
FOR THE PERIOD(S) JUL 01, 2018 THROUGH JUN 30, 2019

CARTERET COUNTY, NC
GL520R-V08.13 PAGE 1

*** USER MAY NOT HAVE ACCESS ***		ANNUAL	ACT MTD POSTED	ACT YTD POSTED	REMAINING	
*** TO ALL ACCOUNTS IN RANGE ***		AMENDED BUDGET	ENCUMBERED	AND IN PROCESS	AND IN PROCESS	PCT
					BALANCE	
110	GENERAL FUND					
40	ECONOMIC & PHYSICAL DEVELOP					
4901	BEACH NOURISHMENT					
12100	SALARIES	103,595.00	0.00	10,260.00	106,536.11	2,941.11- 102 -----
12600	PART TIME WAGES	0.00	0.00	0.00	0.00	0
18100	FICA EXPENSE	7,925.00	0.00	769.15	8,023.71	98.71- 101 -----
18200	RETIREMENT CONTRIBUTION	8,135.00	0.00	828.80	8,376.77	241.77- 102 -----
18300	HOSPITALIZATION INSURANCE	9,020.00	0.00	659.69	7,883.00	1,137.00 87 -----
18500	UNEMPLOYMENT	0.00	0.00	0.00	0.00	0
18600	WORKMENS COMP	2,000.00	0.00	0.00	1,911.00	89.00 95 -----
18700	401 K PLAN	5,180.00	0.00	513.00	5,326.79	146.79- 102 -----
20000	SUPPLIES	2,000.00	0.00	0.00	65.50	1,934.50 3
28000	SMALL EQUIPMENT	2,000.00	0.00	0.00	0.00	2,000.00 0
31400	TRAVEL IN-COUNTY	2,400.00	0.00	232.58	1,110.19	1,289.81 46 ----
32100	TELEPHONE & DATA SERVICES	3,120.00	0.00	406.40	3,078.70	41.30 98 -----
32500	POSTAGE	1,000.00	0.00	84.60	471.30	528.70 47 ----
39500	TRAVEL	5,880.00	0.00	0.00	1,174.64	4,705.36 19 -
44000	CONTRACTED SERVICES	485,470.00	0.00	23,140.08	291,691.52	193,778.48 60 -----
44100	FEASIBILITY AGREEMENT	400,000.00	0.00	0.00	0.00	400,000.00 0
44200	SECTION 933 REIMBURSEMENT	0.00	0.00	0.00	0.00	0.00 0
49100	DUES AND SUBSCRIPTIONS	5,000.00	0.00	0.00	5,498.50	498.50- 109 -----
69900	GRANT CONTRIBUTIONS EDC	0.00	0.00	0.00	0.00	0.00 0
TOTAL:	BEACH NOURISHMENT	1,042,725.00	0.00	36,894.30	441,147.73	601,577.27 42 ----
TOTAL:	ECONOMIC & PHYSICAL DEVELOP	1,042,725.00	0.00	36,894.30	441,147.73	601,577.27 42 ----
TOTAL:	GENERAL FUND	1,042,725.00	0.00	36,894.30	441,147.73	601,577.27 42 ----



CARTERET COUNTY BEACH COMMISSION

Agenda Topic Cover Sheet

Bid Result/Award Discussion: Post-Florence Renourishment Project (Phase II).

Meeting Date: **9/23/19**

Topic No. **4**

Suggested Action:

A motion should be entertained to approve the use of the beach nourishment reserve for the construction of Phase II of the Post-Florence Renourishment Project assuming awardable bids are to be received on September 20, 2019, and consistent with cost estimates and expected State/federal funding streams.

As the Commission has been briefed in detail at our last two meetings (May and July) and in the interim leading to now, Phase II of our Post-Florence Renourishment Project is anticipated to entail the placement of 1,995,000 cubic yards (cy) of sand along a cumulative total of 49,900 linear feet (9.5 miles) encompassing West Atlantic Beach, Pine Knoll Shores, Salter Path (State), and a portion of West Emerald Isle. An initial bid opening was scheduled on September 10, 2019. We received two bids at this time (Weeks Marine and Great Lakes Dredge & Dock), and therefore had to re-advertise per State Statutes requiring a minimum of three bids (G.S. 143-129 and G.S. 143-132). The second bid opening is scheduled for September 20, 2019, 3 p.m., at the Emerald Isle Town Hall Conference Room and we can open whatever number bids received at that time. This is obviously the Friday before our Monday Beach Commission meeting and we will assess and summarize the results of the bids over the course of the weekend and provide our recommendation(s) at the Beach Commission meeting. Assuming we receive an awardable bid within our estimate, we will also request the Beach Commission's approval to release funding from the nourishment reserve account consistent with our cost schedule that includes capital from the State per S.L. 2018-134 and *Florence* fixed cost-funds that have been released by FEMA for Pine Knoll Shores and Indian Beach.



CARTERET COUNTY BEACH COMMISSION

Agenda Topic Cover Sheet

2018 - 2019 Annual Report: *Bogue Banks Beach & Nearshore Mapping Program.*

Meeting Date: 9/23/19

Topic No. 5

Suggested Action: None.

Introduction and General Observations

Nicole VanderBeke with the engineering firm of Moffatt & Nichol (M&N) will be providing a PowerPoint presentation to the Beach Commission at our September meeting highlighting the key results and main conclusions regarding the 2018-19 Bogue Banks Beach & Nearshore Mapping Program (i.e., beach monitoring or surveying). Please note although we conducted the fieldwork associated with a post-*Dorian* survey earlier this month along Bogue Banks, these results and conclusions have yet to be formulated. Hence the presentation the Beach Commission will receive summarizes our annual, comprehensive survey of Shackleford Banks, Bogue Banks, and Bear Island conducted earlier this year (late Spring 2019).

On a contractual note, the Commission may remember we entered into a new 5-year contract extension with M&N in 2018 encompassing the 2018 to 2022 timeframe, and our original contract with M&N was also for five years (2008 to 2012) and was subsequently extended for another five years (2013 to 2017), before this most recent extension (2018 to 2022). M&N's responsibilities for the mapping program include; **(1)** oversight of annual surveying by Geodynamics, LLC of the profiles established along Bogue Banks, Bear Island, and Shackleford Banks, **(2)** preparation of an annual report, and if needed; **(3)** a rapid response post-hurricane survey along Bogue Banks only, and **(4)** an accompanying Impact Evaluation Report. Also in 2018, **(5)** we begun incorporating full-coverage, swath-based, mobile laser scanner technology along the topographic stretch of approximately 14 miles of central Bogue Banks capturing our traditional "hot spots". This hot spot reach is surveyed (laser scanned) twice per year – once during routine annual surveying activities before the hurricane season and once after the season passes. Per conditions stipulated in our most recent contract extension, we will re-assess the usefulness of the laser scan surveys after the first two years (2020 report) and elect to continue or not with this survey component thereafter.

As introduced above, M&N's September 2019 presentation will summarize survey activities conducted from Spring 2018 to Spring 2019 encompassing Bogue Banks; and Shackleford Banks and Bear Island, located east and west of Bogue Banks, respectively. The most recent comprehensive survey event (2019) is compared to the spring 2018 survey event of all the aforementioned islands, and therefore encapsulates **ALL** of the events that transpired during the past year. Importantly for all the islands, this incorporates the effects of hurricane *Florence* (September 2018) and even more specifically for Bogue Banks as we conducted a standalone [post-storm survey](#) along this island reach. Furthermore, the annual survey report also captures the addition of sand associated with [Phase I](#) of the Post-*Florence* Beach Nourishment Project constructed along East Emerald Isle and Indian Beach/Salter Path - County. This past year is an anomaly in these regards (i.e., hurricane survey and nourishment) and usually it is cost-prohibitive to survey subsequent to each and every individual "small-scale" event, such as after a coastal low or distant tropical storm passes. Thus we have to make inferences to what minor events triggered episodes of erosion and accretion throughout the year – again, notwithstanding a specific post-storm survey such as this past year (*Florence*), or *Matthew* in 2016, or *Irene* in 2011.

To these effects, the Beach Commission is acutely aware that we rely heavily on a "credit – debit" volumetric approach with respect to our overall beach management philosophy and to track change throughout time. Debits are usually in the form of hurricanes, tropical storms, or other high energy events that remove sand from the beach profile, while credits are almost always attributed to beach nourishment, or to the rare occurrence of storms actually moving sand up the beach profile as we observed with Hurricane *Matthew* in [2016](#) (and possibly *Dorian* in 2019). To these ends and as mentioned above, from spring 2018 to spring 2019 we experienced very notable episodes of "debit" and "credit" in the form of hurricane *Florence* and the Spring 2019 Phase I Nourishment Project, respectively.

Methodology/Historic Overview

The methodology used for our beach monitoring program was initiated in 1999 when Coastal Science & Engineering (CSE) established 111 shore-perpendicular profiles along Bogue Banks spaced approximately 1,000 feet apart across the entire island. This profile network has in the past or continues to help us achieve the following objectives; **(1)** Establish a monitoring network to determine volume deficiencies during formulation of the Bogue Banks Restoration Project (early 2000s) and future nourishment efforts, **(2)** Help assess the volume of sand lost (or gained) during Hurricanes *Floyd* (1999), *Isabel* (2003), *Ophelia* (2005), *Irene* (2011), *Matthew* (2016) and *Florence* (2018); and where applicable, obtain FEMA reimbursement to replace the sand lost during many of these disasters, **(3)** Serve as spatial control during beach construction events, **(4)** Assess the fate of various beachfills constructed along Bogue Banks since 2001, **(5)** Provide a method to determine the overall condition (health) and changing geomorphology of Bogue Banks and adjacent islands, and **(6)** Serve as the primary database foundation in formulating the Bogue Banks Master Plan.

CSE originally augmented the monitoring network with an additional 9 profiles in 2005 for a total of 120 profiles along Bogue Banks, and also as part of our modified contract with CSE for 2005, 18 new profiles were established on Bear Island for monitoring purposes, and similar to Bogue Banks, the spacing between profiles is approximately 1,000 feet. CSE also established 24 profiles along Shackleford Banks in 2005 for repetitive monitoring activities spaced at intervals closer to 2,000 feet. As part of our original five-year contract with M&N, we added two additional profiles in 2008 along the inlets bordering Bogue Banks (Bogue and Beaufort), which increased our Bogue Banks total from 120 to 122 profiles, and the overall total (Bogue Banks, Shackleford Banks, and Bear Island) from 162 to 164.

Examining Bogue Banks from an aerial or “map view” perspective, we currently divide the island into ten major management reaches (7 oceanfront and 3 inlet) and our 2019 report utilizes these same, and further subdivisions as well - see Table 1 immediately below and Figure 1 on the next page.

Reach ID	Profile Range	Cell Reach Description (approximate – west to east)
Bogue Inlet – channel	117, 117a – 120	The Point (Inlet Ct. towards the west and north)
Bogue Inlet – ocean	1 – 11	Inlet Ct. towards the east to Deer Horn Dunes
EI – west	12 – 25	Deer Horn Dunes eastward to Chapel by the Sea
EI – central	26 – 36	Chapel by the Sea eastward to 21 st Street
EI – east	37 – 48	21 st Street to the Old IB Pier
IB/Salter Path	49 – 58	Old IB Pier eastward to Ocean Terrace
Pine Knoll Shores	59 – 76	Ocean Terrace eastward to DoubleTree Pier
Atlantic Beach	77 – 102	DoubleTree Pier eastward to Ft. Macon State Park entrance
Ft. Macon	103 – 112	Ft. Macon State Park entrance eastward to boulder jetty
Beaufort Inlet	112, 112a – 116	Boulder Jetty northward towards inlet overlook

Table 1 – Summary of the management ranges and profile nomenclature utilized for beach/neashore monitoring purposes along Bogue Banks.

The precise boundaries for the management reaches changed in 2014-2015 with the advent of our “Bogue Banks Beach Nourishment Master Plan”. A significant component of the Master Plan included a re-evaluation of the beach based not on purely geo-political boundaries, but coupled with physical attributes as well. In essence beach profiles were grouped together based on similar dune/berm shape and height to determine discrete reaches along the island. This re-grouping of the management reaches continues to be fully incorporated in the monitoring report.

From a cross-sectional vantage point, M&N subdivides the beach into five compartments separated by distinct elevations reported in feet (ft.) referenced to the National American Vertical Datum of 1988 (NAVD88), where “0” is approximately -0.5 ft. below present mean sea level. The five analytical zones include; (1) volume changes above the mean high water line (+1.5 ft. NAVD88) capturing the recreational (dry sand) beach area, (2) volume changes above -5 ft. NAVD88 capturing wading depth and the recreational beach, (3) volume changes above -12 ft. NAVD88 capturing the outer bar and the wading depth/recreational beach area, (4) volume changes above -20 ft. NAVD88, and (5) volume changes above -30 ft. NAVD88. The latter two zones are utilized to gain a sense of changes occurring at deeper depths offshore, and in the past have provided some very good insights to how the beach behaved in the wake of hurricanes *Irene* (2011-12), *Matthew* (2016-17), and *Florence* (2018) while also augmenting our ability to constrain the geometry of the inlet complexes.

To help make the data more manageable/understandable and to consistently measure changes over time, we normally reference the compartment encompassing volume changes **above -12 ft. NAVD88** incorporating the recreational beach, wading depth, and the outer bar. We also take a close look at the volume changes above +1.5 ft. NAVD88 (mean high water) as this represents the changes occurring along the recreational dry sand beach where most of the visual observations/opinions regarding beach health are formulated. Importantly these categories help us determine if the dry beach is gaining or losing sand, and whether or not the material is being transferred to the underwater portion

of the beach profile. For instance, there could be examples where the dry beach alone has lost sand compared to the year prior, but the overall volume to -12 ft. NAVD88 has remained the same – this would indicate the sand from the beach has been deposited just offshore, so the overall volume is in balance compared to the year prior.

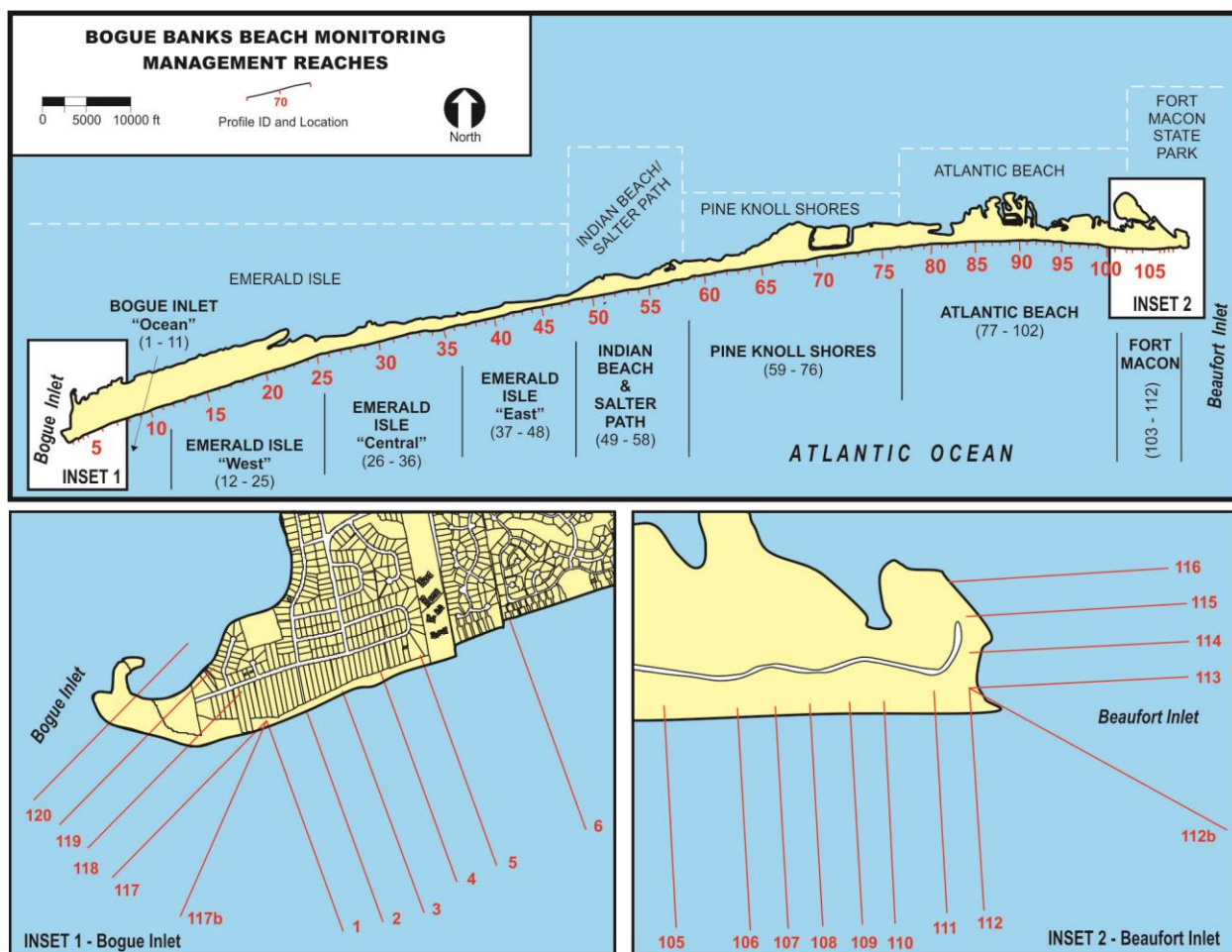


Figure 1 – Site map depicting the location/identification scheme of the 122 profiles positioned along Bogue Banks utilized for beach/nearshore monitoring purposes and the management reaches provided in the Bogue Banks Beach “Master Plan”.

Results

Beach Volume - As inferred above, one of the means to quantify beach health is to compare the volume of sand lost or gained over time along Bogue Banks and the adjacent islands, and this tenet has been a hallmark of our beach/nearshore monitoring program. Utilizing the “above -12 ft. NAVD88” benchmark, the 128,393 linear feet of oceanfront along Bogue Banks (profiles 1 – 112, figure 1) **lost** -3,591,048 cubic yards (cy) of sand in 2018-19, equating to an average loss of -28.0 cy/foot (cy/ft). Conversely and not surprisingly, the Phase I nourishment reach included the addition of 975,647 cy of sand, which mitigated the losses greatly along East Emerald Isle and Indian Beach/Salter Path – e.g., the loss immediately after *Florence* in East Emerald Isle was -35.8 cy/ft to -12 feet NAVD88 yet was -1.4 cy/ft in May 2019 (post nourishment). Table 2 (next page) includes a reach-by reach summary and we will delve more into each reach during the presentation.

Reach	Profiles	Linear Feet	Average Shoreline Change (Spring 2018 - Spring 2019)	Average Volume Change (Spring 2018 - Spring 2019)
Bogue Inlet - Ocean	1 - 11	11,488	-14 feet landward (-)	-38 cubic yard / linear foot
Emerald Isle - West	12 - 25	18,288	-13 feet landward (-)	-49 cubic yard / linear foot
Emerald Isle - Central	26 - 36	15,802	-8 feet landward (-)	-37 cubic yard / linear foot
Emerald Isle - East	37 - 48	13,220	+34 feet seaward (+)	-1 cubic yards / linear foot
Indian Beach/Salter Path	49 - 58	12,850	+13 feet seaward (+)	-15 cubic yards / linear foot
Pine Knoll Shores	59 - 76	23,878	-11 feet landward (-)	-32 cubic yards / linear foot
Atlantic Beach	77 - 102	26,176	-32 feet landward (-)	-29 cubic yards / linear foot
Ft. Macon State Park	103 - 112	6,691	-12 feet landward (-)	+4 cubic yards / linear foot
Totals or Average =	112	128,393	-9 feet landward (-)	-28 cubic yards / linear foot

Table 2 – Average shoreline and volume change from Spring 2018 to Spring 2019 for eight oceanfront reaches positioned along Bogue Banks.

Also, 2019 marks the twentieth anniversary of hurricane *Floyd* and since 1999; Bogue Banks has *gained* roughly 6.0 million cy of sand, which again is mostly attributed to the many beach nourishment projects that have been constructed along the island beginning in 2001. A total of approximately 15.5 million cy of sand have been placed directly on Bogue Banks as a result of beach nourishment, meaning 9.5 million cy have since eroded off the beach (15.5 million cy placed on the beach *minus* 6.0 million cy remaining). If we average the volume loss (-9.5 million cy) across the entire 128,393 feet (24.3 miles) of Bogue Banks oceanfront, the island has lost sand at a rate of -3.9 cy/ft/yr since 1999 (a 20-year window). Our average volumetric change for the previous year (1999 - 2018) was -2.0 cy/ft/yr – that’s a large jump in the background erosion rate value and again demonstrates the type of impact *Florence* had along Bogue Banks.

A common question we ask ourselves every year is, “Where does the sand go?”. The volume in our “sand box”, and shoreline positions for that matter, have reacted to an influx of nourishment sand or efflux of sand related to storms/background erosion over the past several years and movement of that sand in the alongshore and shore-perpendicular directions. Sand may be moving east or west along the beachfront or in some places, could be migrating in the offshore direction or conversely even welding itself to the visible dry beach.

Historically we do not think there is “much” sand from a gross standpoint migrating (and staying) from one management reach to the other (shore-parallel). In other words, we almost never experience a large loss in one management reach coupled with a significant gain in an adjacent reach. Or *vice versa* – immediately adjacent reaches to those that received direct nourishment rarely experience significant gains the following year. Obviously this is just a general rule of thumb and is not valid for profiles/reaches near inlets. 2019 provides no exception to these trends and even reinforces this notion – most of the losses can be traced up and down the beach slope (shore perpendicular) in each and every profile.

As mentioned several times above, the volume of sand residing along the entire island is still significantly higher than 1999, and is attributable to the many beach nourishment projects that have been constructed since 2001. All the island management reaches are in excess of our Master Plan “volumetric thresholds”. Our Master Plan

management reaches were developed by; (A) evaluating dune/berm shape and height to modify some of our management reach boundaries, and (B) subsequently utilize a 25-year storm event to model the volumetric needs in each of the new management reaches. Our 2019 management reach values in terms of average cy/ft and our minimum volumetric thresholds (i.e., nourishment triggers) are presented graphically in Figure 2.

And lastly with respect to “nourishment triggers”; our Static Line Exception Plans and FEMA Monitoring Maintenance Plans all previously possessed unique and different sets of triggers. In 2014 however we consolidated and formally resubmitted these Plans to the appropriate State and federal agencies using our new Master Plan as a unifying, umbrella document to address overall beach health, project permitting, and financial commitments.

Average Profile Volume by Bogue Banks Reach

(foredune to -12 NAVD 88)

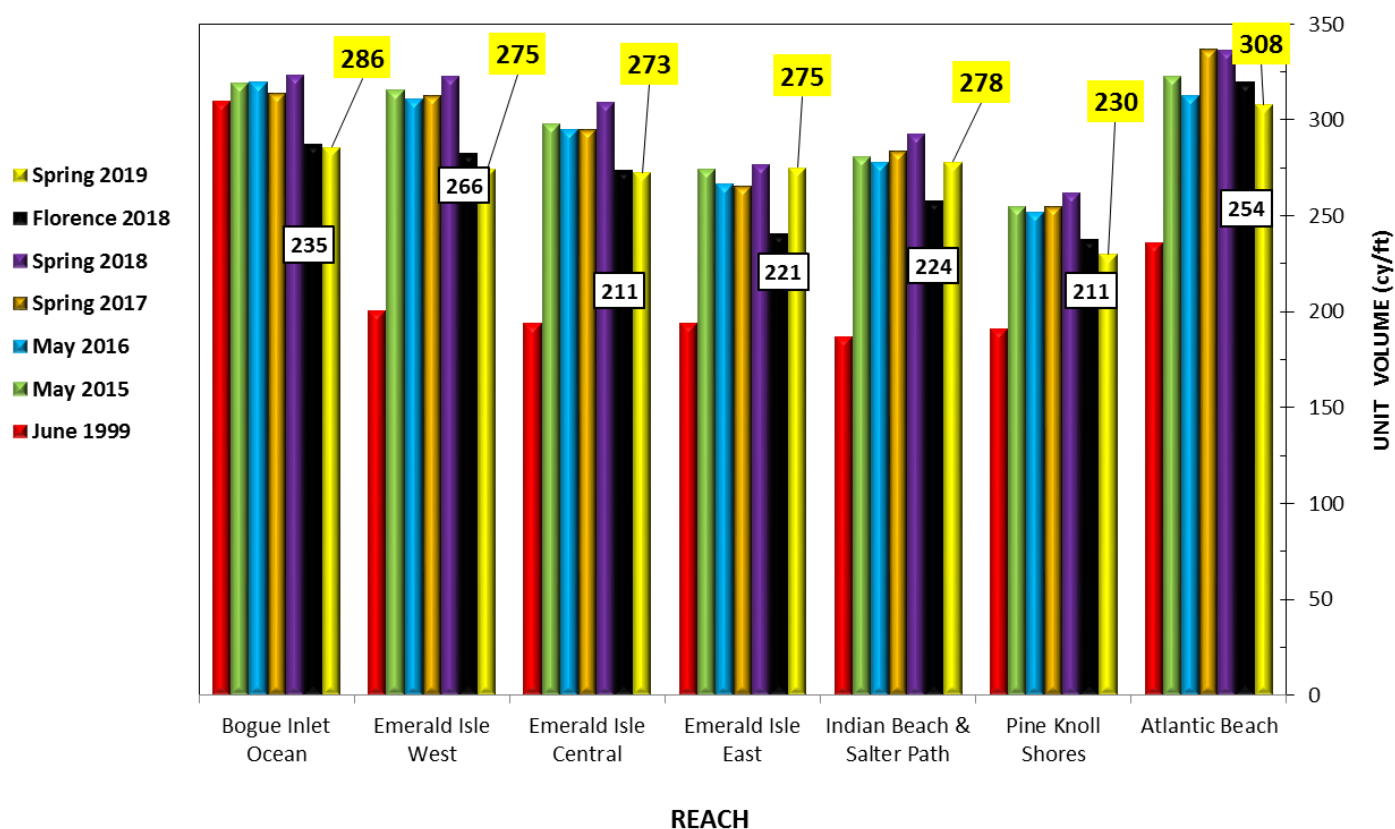


Figure 2 – Average profile volumes for September 1999 (baseline year), 2019 (the most recent survey), *Florence* (2018), 2018, 2017, 2016, and 2015 for seven oceanfront management reaches along Bogue Banks. The minimum volumetric thresholds (i.e., nourishment triggers) are provided in the white call-out boxes while the 2018 average volume is represented in the yellow call-out boxes. The impacts of the Phase I Post-*Florence* Beach Nourishment Project can clearly be noticed during the Spring 2018 through the Spring 2019 timeframe in the Emerald Isle East and Indian Beach & Salter Path reaches.

Shoreline Change – Of course another and more common/familiar measurement of beach health is shoreline change. To quantify and consistently compare shoreline positions over time, the “shoreline” is determined as the Mean High Water elevation established at +1.5 feet NAVD88. This measurement parameter is sometimes referred to as a “datum-derived shoreline” as we can numerically determine where along a profile the +1.5 feet elevation resides rather than depending upon more subjective determinations that are required by other methods, such as aerial photography (i.e., wet/dry line, the wrack line, etc.).

Utilizing a datum-derived shoreline, changes from Spring 2018 to Spring 2019 for Bogue Banks at any given reach ranged from +34.2 feet seaward in Emerald Isle – East to –32.4 feet landward in Atlantic Beach resulting in a net average change of -8.6 feet landward for the entire oceanfront. The only two reaches to experience seaward advance (accretion) of the shoreline were in the Phase I Beach Nourishment Reach – East Emerald Isle and Indian Beach/Salter Path (Table 2). Changes in the beach slope resulting from subtle differences in grain sizes and reshaping of the swash zone because of tides, storms, *et cetera* can also impact the spatial position of the mean high water elevation a few feet in either the positive (seaward) or negative (landward) direction.

Once finalized, the 2019 Monitoring Report will be made available on-line at our "www.protectthebeach.com" website and the shoreline data will also be incorporated into our interactive beach mapping website at "www.protectthebeachmaps.com". Hard copies of the 2019 report will be provided to all of the municipalities along Bogue Banks, Park Services, and others who have participated in the monitoring effort. The fieldwork window associated with the 2019-20 monitoring event will likely commence in May 2020 subsequent to the construction of the Phase II Post-*Florence* Beach Nourishment Project along west Atlantic Beach, Pine Knoll Shores, Salter Path (State), and a portion of Western Emerald Isle; and we will have the presentation completed shortly thereafter, hopefully by July/August of 2020 (notwithstanding any hurricanes, etc.). To that effect our contract includes a post-hurricane survey that can be exercised in the case we are impacted by a federally-declared disaster akin to *Irene* in 2011, *Matthew* in 2016, *Florence* in 2018, and *Dorian* in 2019. Of course the fieldwork for the *Dorian* survey was just completed in mid-September and the results will be presented at our next Beach Commission meeting scheduled for October 28th.